

BUILDING ENGINEERING REPORT (BER)

Building Name: Federal Building - 517 Gold Avenue SW
Building No: NM0024ZZ
Location: Albuquerque, New Mexico

WORK ITEM: Action required within 5 years X Action required within 5-20 years ____

Number: 479.2 - Miscellaneous Fire Protection

Title: Add Emergency Voice Evacuation System

Cost: FY 94: \$38,000 FY 98: \$52,000

DESCRIPTION:

The building's entire Fire Alarm System was replaced in about 1992, with an Edwards Model 8500 system. However, an emergency voice evacuation system was not included as part of this life safety upgrade.

The building qualifies as a high-rise structure and an emergency voice evacuation system is recommended by the life safety code.

It is recommended that an emergency voice evacuation system be added to the existing fire alarm system. The existing fire alarm horns can be utilized for the necessary speakers and the existing Fire Alarm Control Panel upgraded to include a voice evacuation system.

JUSTIFICATION:

With the addition of an emergency voice evacuation system, the building would be in compliance with the Life Safety Code for a high-rise structure.

An emergency voice evacuation system would reduce the building evacuation time in an emergency, and reduce the risk of personal injury during a building evacuation.

An emergency voice evacuation system would provide a means to advise building tenants of fire alarm drills, false fire alarms, and emergency conditions.

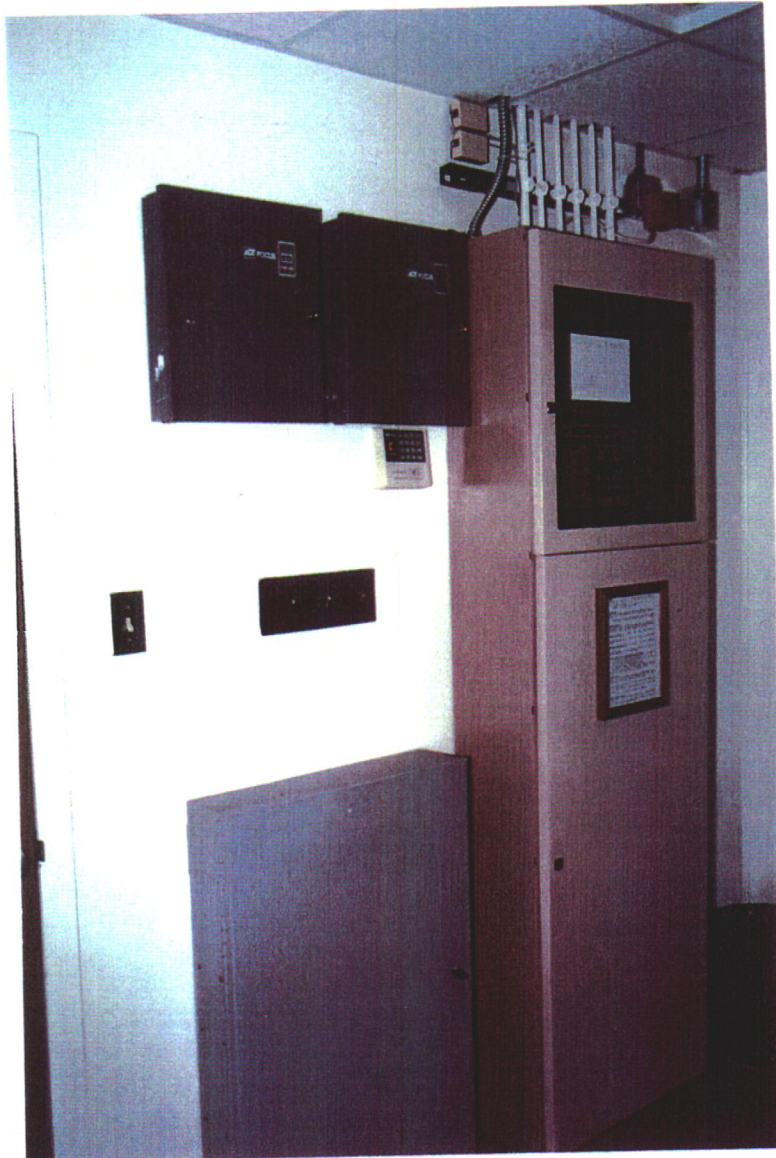
ASSOCIATED WORK ITEMS:

None.

BUILDING ENGINEERING REPORT (BER)

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Location: Albuquerque, New Mexico

Number: 479.2 - Miscellaneous Fire Protection
Title: Add Emergency Voice Evacuation System



Edwards 8500 Main Fire Alarm Control Panel

BUILDING ENGINEERING REPORT

Building Name: Federal Building – 517 Gold Avenue SW
Building No.: NM0024ZZ
Location: Albuquerque, New Mexico

Number: 479.2 – Fire Protection

DETAILED COST ESTIMATE

| ITEM DESCRIPTION | QUANTITY | UNIT | UNIT COST | TOTAL |
|---------------------------------------|-------------------|-----------|-------------|-------------|
| Add Emergency Voice Evacuation system | | | | |
| Wire 2pr #18 | 6000 (1,828.8) | FT (M) | \$0.63 | \$3,780.00 |
| Conduit | 6000 (1,828.8) | FT (M) | \$1.29 | \$7,740.00 |
| Fire Alarm Panel Mods. | 1 | LS | \$15,000.00 | \$15,000.00 |
| Subtotal | | | | \$26,520.00 |
| Mark-Up – 15% Contingency | | | | \$3,978.00 |
| Mark-Up 18% Overhead and Profit | | | | \$5,489.64 |
| N.M. Gross Receipts Tax at 5.8125% | | | | \$2,091.78 |
| Total E. C. C. | | | | \$38,079.42 |
| Total E.C.C. (rounded) | | | | \$38,000.00 |

BUILDING ENGINEERING REPORT (BER)

Building Name: Federal Building - 517 Gold Avenue SW
Building No: NM0024ZZ
Location: Albuquerque, New Mexico

WORK ITEM: Action required within 5 years X Action required within 5-20 years

Number: 489.1

Title: Non-Structural Seismic Upgrade Including HVAC, Piping, Lights and Ceiling

Cost: FY 94: \$411,000 FY 98: \$560,000

DESCRIPTION:

Throughout the building there exists no seismic or lateral bracing for any of the HVAC ductwork, fire protection piping, interior plaster and masonry partitions, lights or lay-in ceiling. The Uniform Building Code requires all non-structural equipment, piping, partitions and ceilings to be anchored to the primary seismic resisting system. In addition equipment and life safety systems must be restrained in such a manner as to remain functional following a major earthquake. Life safety systems would include the fire protection piping and the emergency lights.

This work item is required only where the existing systems are left in place. Any new work associated with the replacement of piping, HVAC, lights and ceilings include the cost of seismic bracing in the installation. Work items include the removal of the existing plaster ceiling located above the lay-in ceiling. This work will include installation of lateral ties from the HVAC and piping to the underside of the structural slab using channel struts or rods. Partitions should have lateral braces located along the top of the wall and extend at 45 degrees to the underside of the structural slab.

JUSTIFICATION:

Justification for the non-structural seismic upgrade is that these components do not comply with the Uniform Building Code minimum requirements and pose a potential threat to the life safety of the building occupants.

For details see Seismic Analysis in Appendix C of the technical backup.

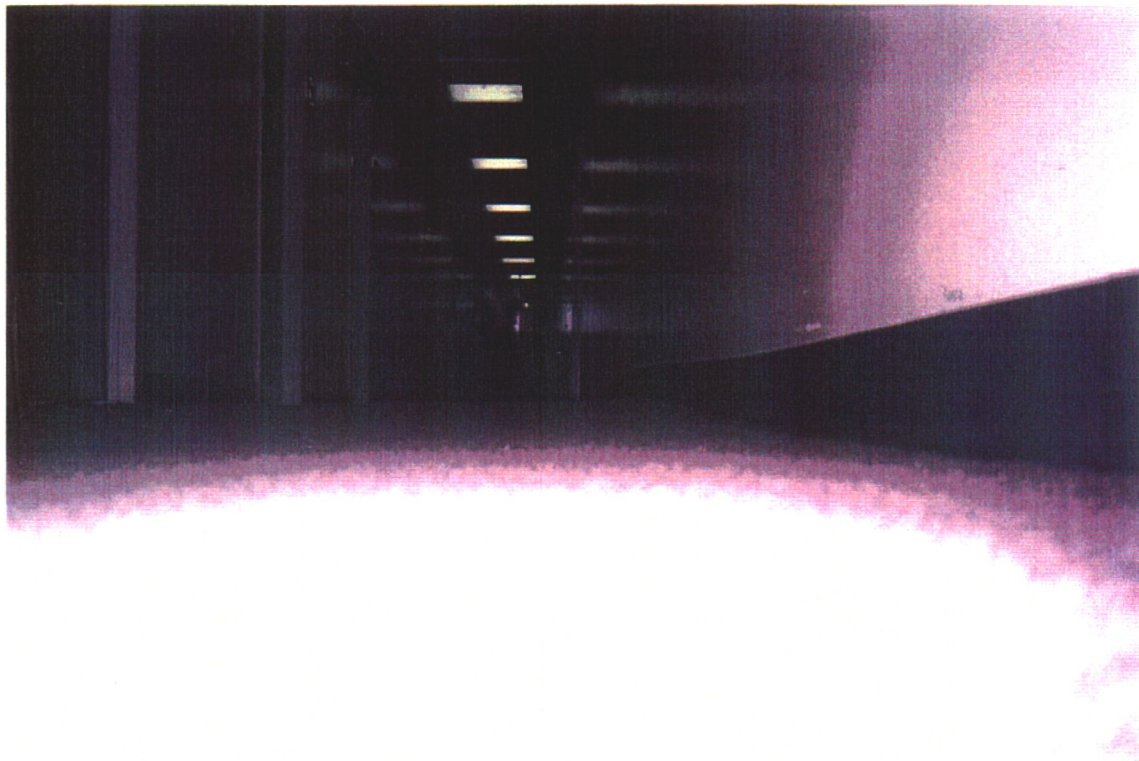
ASSOCIATED WORK ITEMS:

None.

BUILDING ENGINEERING REPORT

Building Name: Federal Building - 517 Gold Avenue SW
Building No.: NM0024ZZ
Location: Albuquerque, New Mexico

Number: 489.1 Structural
Title: Non-Structural Seismic Upgrade Including HVAC Piping, Lights and Ceiling



View of Typical Corridor Floor

BUILDING ENGINEERING REPORT (BER)

Building Name: Federal Building – 517 Gold Avenue SW

Building No.: NM0024ZZ

Location: Albuquerque, New Mexico

Number: 489.1 – Seismic

Title: Non-Structural Seismic Upgrade including HVAC, Piping, Lights, and Ceiling

DETAILED COST ESTIMATE

| ITEM DESCRIPTION | QUANTITY | UNIT | UNIT COST | TOTAL COST |
|--------------------------------------|----------------------|------------|-----------|------------|
| Remove Existing Plaster Ceiling | 214200 (19,899.8) | SF (SM) | \$0.22 | \$47,124 |
| Install Piping and HVAC Lateral Ties | 244800 (22,742.7) | SF (SM) | \$0.34 | \$83,232 |
| Install Ceiling Seismic Wires | 244800 (22,742.7) | SF (SM) | \$0.20 | \$48,960 |
| Install Wall Bracing | 244800 (22,742.7) | SF (SM) | \$0.46 | \$112,608 |
| Subtotal | | | | \$291,924 |
| Mark-Up – 15% Contingency | | | | \$43,789 |
| Mark-Up – 18% Overhead and Profit | | | | \$52,546 |
| N.M. Gross Receipts Tax at 5.8125% | | | | \$22,568 |
| Total E.C.C. | | | | \$410,826 |
| Total E.C.C. (rounded) | | | | \$411,000 |

BUILDING ENGINEERING REPORT (BER)

Building Name: Federal Building - 517 Gold Avenue SW
Building No: NM0024ZZ
Location: Albuquerque, New Mexico

WORK ITEM: Action required within 5 years X Action required within 5-20 years ____

Number: 489.2A

Title: Seismic Support of the Exterior Walls

Cost: FY 94: \$1,368,000 FY 98: \$1,863,000

DESCRIPTION:

The unreinforced exterior masonry walls are not supported laterally to the seismic resisting system or to the building structure. The exterior masonry walls have no positive attachment to the building structure. In the event of an earthquake, the possibility of the wall collapsing is extremely likely.

The attachment of the exterior walls would entail removing the plaster wall which houses an exterior heating convector. After removal of the interior plaster wall, a continuous plate along the exterior to sandwich the upper and lower portions of the wall in order for the wall to transfer lateral forces to the exterior spandrel beams and floor slab. The work will also involve architectural treatment and weather protection of the exterior wall attachment. However this would not upgrade the building appearance.

JUSTIFICATION:

The current attachment of the exterior walls do not comply with the Uniform Building Code minimum seismic requirements for non-structural elements. The life safety of building occupants as well as the public, such as pedestrians, is at risk.

For details see Seismic Analysis in Appendix C of the technical backup.

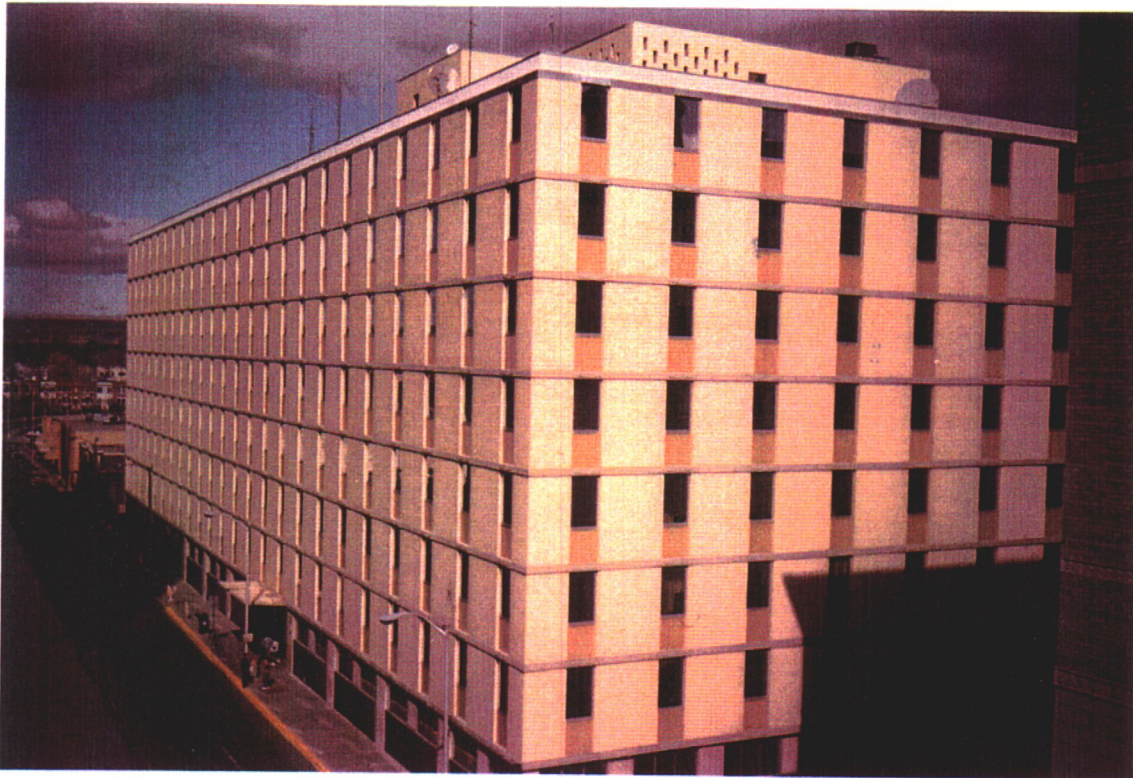
ASSOCIATED WORK ITEMS:

None.

BUILDING ENGINEERING REPORT

Building Name: Federal Building - 517 Gold Avenue SW
Building No.: NM0024ZZ
Location: Albuquerque, New Mexico

Number: 489.2 Structural
Title: Seismic Support of Exterior Walls



View of Southeast Exterior

BUILDING ENGINEERING REPORT (BER)

Building Name: Federal Building – 517 Gold Avenue SW

Building No.: NM0024ZZ

Location: Albuquerque, New Mexico

Number: 489.2A

Title: Seismic Support of Exterior Walls

DETAILED COST ESTIMATE

| ITEM DESCRIPTION | QUANTITY | UNIT | UNIT COST | TOTAL COST |
|------------------------------------------|-------------------|-----------|-----------|-------------|
| Office Trailer | 6 | MO | \$206 | \$1,236 |
| Temporary Utilities | 6 | MO | \$750 | \$4,500 |
| Project Manager | 16 | WK | \$2,025 | \$32,400 |
| Superintendent | 24 | WK | \$1,725 | \$41,400 |
| Testing | 1 | LS | \$20,000 | \$20,000 |
| Barriers | 1 | LS | \$15,000 | \$15,000 |
| Permit/Bond/Insurance | 1 | LS | \$40,000 | \$40,000 |
| Cleanup | 1 | LS | \$20,000 | \$20,000 |
| Remove Plaster Wall and Heating Convect | 6432 (1,960.5) | LF (M) | \$1.56 | \$10,034 |
| Remove Plaster and Lay-In Ceiling | 6432 (1,960.5) | LF (M) | \$0.20 | \$1,286 |
| Install Continuous Exterior Plate | 7236 (2,205.5) | LF (M) | \$58.20 | \$421,135 |
| Install Plate Anchors | 5800 | EA | \$15 | \$87,000 |
| Install Interior Angle at Top of Wall | 6432 (1,960.5) | LF (M) | \$10.45 | \$67,214 |
| Install Interior Angle at Bottom of Wall | 6432 (1,960.5) | LF (M) | \$9.85 | \$63,355 |
| Install Angle Anchors | 2144 | EA | \$8.50 | \$18,224 |
| Install Weather Protection | 7236 (2,205.5) | LF (M) | \$11.76 | \$85,095 |
| Reinstall Exterior Plaster Wall | 6432 (1,960.5) | LF (M) | \$4.56 | \$29,330 |
| Reinstall Convective Heater | 6432 (1,960.5) | LF (M) | \$2.27 | \$14,601 |
| Subtotal | | | | \$971,811 |
| Mark-Up – 15% Contingency | | | | \$145,772 |
| Mark-Up – 18% Overhead and Profit | | | | \$174,926 |
| N.M. Gross Receipts Tax at 5.8125% | | | | \$75,127 |
| Total E.C.C. | | | | \$1,367,636 |
| Total E.C.C. (rounded) | | | | \$1,368,000 |

BUILDING ENGINEERING REPORT (BER)

Building Name: Federal Building - 517 Gold Avenue SW
Building No: NM0024ZZ
Location: Albuquerque, New Mexico

WORK ITEM: Action required within 5 years X Action required within 5-20 years ____

Number: 489.2B - Seismic Protection

Title: Exterior Facade Replacement

Cost: FY 94: \$5,265,000 FY 98: \$7,173,000

DESCRIPTION:

To complete the seismic protection work item #489.1 and 489.3, sections of the exterior walls must be removed. In lieu of strengthening/supporting unreinforced masonry walls, a complete facade replacement would accomplish the support requirement, (modernize the facade) and upgrade the exterior appearance of the building. After completion of the concrete shear wall, installation of the new curtain wall is installed. The curtainwall is continuous from grade (sidewalk) to parapet height on all four sides of the building. The curtainwall system proposed is tinted insulated glazing, spandrel glazing and aluminum break metal. See Work Item #515 - HVAC for exterior heat system modifications. If this work item is selected Work Item 515.3A and 515.3B are not required.

JUSTIFICATION:

A new exterior facade is required to conceal all new seismic modifications of the exterior concrete frame. The new curtainwall is also a better insulating material than the existing curtainwall. The new appearance is also appropriate for the 1990's and beyond. The existing exterior is 35 years old and showing its age.

For details, see Option 1B Seismic Analysis in Appendix C of the technical backup.

ASSOCIATED WORK ITEMS:

Refer to Work Item No. 515 - HVAC System.

Refer to Work Item No. 489.2A - Seismic Support of the Exterior Walls.